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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 26

Application Number: 09/057,261  
Filing Date: April 08, 1998  
Appellant(s): O'HAGAN, TIMOTHY P.

Himanshu S. Amin  
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 17 December 2002 (paper #25).

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct. Some common definitions of terms are included below.

Definitions of claim terms: “dictionary” is a reference book containing words; and “syntax” is an arrangement of parts or elements, or the way in which words are put together to form phrases or sentences.

Definitions of prior art (Barclay) terms: vocabulary is a list or collection of words or of words and phrases; grammar is the characteristic system of inflections and syntax of a language; and lexicon is an alphabetical arrangement of the words in a language and their definitions.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The rejection of claims 1, 2, 4, 5, 8-18, 20 and 22 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,960,399

Barclay et al.

24 Dec 1996

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4, 5, 8-18, 20 and 22 are rejected under 35 U.S.C. § 103 as being unpatentable over Barclay (5,960,399).

As per claim 1, 12, 14, 17, 18, 20 and 22, Barclay teaches in figures 1, 4 and 6 a “host computer” (his server 4, 80, 82, 104 or 102) and “mobile terminal” (his PC w/ sound board 8 or client 70). The use of “dictionary file and syntax file” are taught by Barclay’s use of vocabularies and grammars (col. 3, lines 16-17). HTTP and/or TCP/IP are the notoriously well known protocols upon which to share information between host and user relied upon by internet browsers such as Netscape Navigator® as noted by Barclay in column 2, line 61 (or as Barclay says, client 70, Browser 78, figure 4).

It is noted that Barclay does not anticipate “a GUI display file having attached thereto at least one of a dictionary file having phonemes and syntax file having allowable patterns of words . . . content specific to the GUI display file”. However, he teaches that this is prior art technology performed by an Internet based speech recognition system called SAM which requires the speech recognizer software to reside at the client . . . the grammar is, in effect distributed and downloaded when a Web page for specific topics is entered . . . the vocabularies and grammars are small. This teaches that it was well known prior to 1996 to provide small grammars and vocabularies (contained in a dictionary), which are specific to a GUI such as, are

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commonly known to exist on a web page for interaction at remote locations through common TCP, IP and HTTP protocols.

Using phonemes to specify words is explicitly taught by Barclay in column 2, lines 9-29 where he indicates the use of connected phonemes representing continuous speech and that phonetic word models are constructed using Hidden Markov Models (HMM's).

It would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, to combine the limited capability of SAM noted above with the Markov models taught by Barclay because Barclay explicitly teaches that these are known combinations of technology utilized to perform speech recognition. Barclay improves upon such a limited system by also allowing speaker recognition but explains in his background sufficiently that one of ordinary skill in the art would know that a simplification such as using limited vocabulary (dictionary) and syntax (grammar) specific to a GUI would only yield expected results that are well known in the art.

The explicit mention of the SAM (Speech Aware Multimedia) system indicates that such use of small vocabulary and grammars is known prior art. Thus, the improvement of Barclay to allow larger vocabularies to be shared through a streaming process, does not negate the fact the it is well known that limited vocabularies can be implemented on individual systems. In fact, common sense dictates that the more limited the vocabulary, the less resources a system would require to include storage, processing power, time to download, etc. Thus, one of ordinary skill in the art reading Barclay would recognize that the applicant's invention would be considered prior art having limited vocabularies and grammars, which are downloaded, based on specific Web page topics. As much is taught by Barclay in column 3, lines 5-12.

Claim 2: GUI is inherent in the use of a browser (see above).

Claims 4, 5, 15, 16: The dictionary and syntax data is inherently stored in memory because memory is what a computer uses for storage of any and all data.

Claim 8: Mapping the sequences of phonemes is how HMM allow the computer to perform speech recognition.

Claims 9-11, 13 are inherent for the transfer in data over the internet and are expected elements of any browser such as Netscape (noted above).

**(11) *Response to Argument***

The argument that Barclay fails to teach communicating a dictionary file from a host computer to a mobile device (page 4, paper #25) is in error. In column 3, lines 9-17, Barclay teaches that the grammar is, in effect, distributed and down loaded when a Web page for specific topics is entered, called a "smart page". The example given is downloading a weather page. ... a weather report page could have a grammar specific to words and phrases associated with the weather . . . the vocabularies and grammars are small. Thus, it is clear that prior art sends a vocabulary from a host computer to the client (mobile laptop, etc.).

Appellant's argument on page 4 (paper #25) that Barclay fails to teach communicating a file having phonemes mischaracterizes the employment of HMMs and phonemes to "decode speech." Column 2 of Barclay clearly states (lines 8-29) that: Continuous speech is marked by sounds or phonemes that are connected to each other... Triphoneme is the name given to the different articulation of a given phoneme due to the affects of these side phonemes. The continuous speech is divided into discrete transformed segments that facilitate the several

mathematical operations... The spoken words used in the training are listed in a lexicon and a phonetic spelling of each word is formed and stored. Phonetic word models using HMM's are formed from the lexicon and the phonetic spellings.

The argument on that modelling words using phonemes (page 4, #25) is not taught by Barclay is clearly false based on his explicit use of HMM to model words using phonemes. One of ordinary skill in the art of speech recognition would be intimately familiar with such a notoriously well-known method of modeling speech as noted above.

Thus, it is clear from column 2, lines 9-29 of Barclay that the communication of word models is performed through the stored lexicon (dictionary) and phonetic spellings. It would have been obvious to utilize this data in accordance with the well known mathematical principles of HMM's for use in speech recognition.

The appellant's argument that col. 2, lines 9-29 fail to teach or suggest communicating phonemes from a host computer to a mobile terminal (page 4, paper #24) ignore the combination applied against the claims. The ability to transfer such information from a host computer (server) to a mobile terminal (a client computer) is clearly taught by the prior art in column 3, lines 9-11 of Barclay that indicates the grammar is, in effect distributed and down loaded when a Web page for specific topics is entered.

Appellant's argument on page 5 that Barclay teaches away from the claimed invention is in error because the Examiner does not rely on Barclay's claimed invention to reject the appellant's claims. The Examiner's statement on page 4 of paper 17 that it is obvious to keep a limited vocabulary at the client machine was made in context as follows:

The argument that Barclay teaches away from storage at the remote device being limited to mitigate such storage is not true for the teachings noted above upon which the

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claims read. Barclay's devices teaches that if a user desires a larger vocabulary, then it can be supplemented by allowing data to be "streamed" between remote locations such that the additional dictionaries, syntax and related word models may essentially be shared among multiple locations. However, this teaching still renders it obvious to keep a limited vocabulary at the client machine. (paper #17, page 3, line 21 to page 4, line 5)

These statements were made to refute the applicant's previous argument that Barclay teaches away from any storage such that the remote device will not need any storage of vocabulary in a user (client) computer.

Paper #20, page 2, lines 4-12 clarified the Examiner's position and is repeated below:

Applicant's arguments that Barclay teaches away from the invention ignore what he teaches about the prior art. [sentence deleted] The invention that Barclay claims is not what the examiner is relying upon. The examiner is relying on the description of prior art in columns 1-3. The hardware elements of figures 1, 4 and 6 relied upon are generic and would exist on any client – server relationship through the internet. In column 2, lines 65-66, Barclay teaches that it is well known for client software to run on a laptop or other such small computer. Therefore, it is clear that Barclay suggests the use of a mobile unit. It is notoriously well known that small computers (laptops, PDAs, etc.) were specifically designed to be mobile.

Appellant's argument on page 6 that SAM "requires the speech recognizer software to reside at the client" proves that HMM's and phonemes must be resident at the client machine *a priori* in order to process speech is incorrect. Barclay states phonetic word models using HMM's are formed from the lexicon and the phonetic spellings...A grammar is established and with the lexicon a single probabilistic grammar for the sequences of phonemes is formed (col. 2, lines 27-38). The description of SAM in column 3, lines 9-12 that the grammar is in effect

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distributed and down loaded when a Web page for specific topics is entered. This indicates that the grammar that is down loaded is defined by the models of words specified by the HMM's.

The applicant's argument cannot be true, because if it were, then there would be no use in down loading a grammar related to a Web page if the complete model of that grammar was already resident in the user's computer.

Barclay's description of the prior art makes it clear that the ability to download a useful (small) vocabulary to a mobile user device (such as a laptop computer) is well known. Therefore, Barclay teaches one of ordinary skill in the art that it is obvious to download a useful vocabulary to the user's computer using prior art technology (e.g. - SAM).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



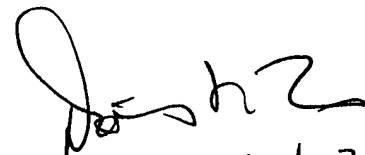
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